ROCKS and MINERALS

A Magazine for Mineralogists, Geologists and Collectors

Official Journal of the Rocks and Minerals Association

AUGUST, 1942

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THE ROCKS AND MINERALS ASSOCIATION

(Members All Over the World)

Organized in 1928 for the increase and dissemination of mineralogic knowledge

To stimulate public interest in geology and mineralogy and to endeavor to have courses in these subjects introduced in the curricula of the public school systems; to revive a general interest in minerals and mineral collecting; to instruct beginners as to how a collection can be made and cared for; to keep an accurate and permanent record of all mineral localities and minerals found there and to print same for distribution; to encourage the search for new minerals that have not yet been discovered; and to endeavor to secure the practical conservation of mineral localities and unusual rock formations.

Ever since its foundation in 1928, the Rocks and Minerals Association has done much to promote the interest in mineralogy. It has sponsored outings, expeditions, formations of mineralogical clubs and the printing of many articles that have been a distinct contribution to mineralogy.

Those of our readers who are members of the Association can rightly feel that they too were sponsors of these many achievements that have helped to give mineralogy a national recognition. Among your friends there must be many who would like to have a part in the Association's work—to share with you the personal satisfaction, the pleasure, and the benefits of membership. Will you give your friends this opportunity to join the Association by nominating them for membership?

Each new member helps to extend the Association's activities—helps to make your magazine larger, better, and more interesting, and above all assists in the dissemination of mineralogical knowledge.

Some advantages of memberships: All members in good standing receive:

(1) **Rocks and Minerals,** a monthly magazine. (2) A member's identification card that secures the privileges of many mines, quarries, clubs, societies, museums, libraries. (3) The right to participate in outings and meetings arranged by the Association. (4) the right to display a certificate of membership and to place after their names a designation indicating their membership or to advertise membership on stationery, etc. (5) The distinction and the endorsement which comes from membership in the world's largest mineralogical society.

Mineralogical clubs which subscribe for **Rocks and Minerals** also become affiliated members of the Rocks and Minerals Association and enjoy all the advantages which such an affiliation affords.

A number of clubs hold membership in the Association, participate in the annual outings, and co-operate in many ways in furthering the aims and ambitions of the Association.

Affiliation with the world's largest mineralogical society cannot fail to increase membership, enlarge circles of acquaintanceship, and stimulate a keener interest in mineralogy.

A list of affiliated clubs will be found among the back pages of the magazine.

ROCKS and MINERALS

PUBLISHED MONTHLY

Edited and Published by PETER ZODAC

August 1942

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ROCKS and MINERALS PEEKSKILL, N. Y., U. S. A.

The official Journal of the Rocks and Minerals Association

Chips From The Quarry

ROCKS AND MINERALS IS CENSORED FOR FOREIGN DISTRIBUTION

To those subscribers residing in foreign countries, an explanation is due them for the non-arrival of the May issue of ROCKS AND MINERALS and for the long delay in the arrival of the June number. This is all beyond our control and is of course due to war.

ROCKS AND MINERALS, along with other technical and semi-technical magazines, has to pass the censor before it leaves the country for foreign lands (Canada and U. S. Possessions are not affected). This is so our enemies can obtain no technical information that would be of value to them. This censorship began April 1st.

The April issue of ROCKS AND MINERALS was mailed without delay but by the time the May number made its appearance the Government had established a number of branch offices to one of which the magazine is now sent. The May number, however, went to the main office (swamped with work) and we are still waiting for word that would release it. As soon as this word comes, the issue will be mailed.

There was some delay in the mailing of the June number but the July issue went out on time. We believe there will be no delay in the mailing of future issues unless something beyond our control may again arise. We hope, therefore, that our foreign subscribers may continue to show patience and tolerance over the delay or non-arrival of their copies of ROCKS AND MINERALS. If, after a reasonable period has elapsed, say three or four months, a magazine fails to arrive, drop us a card and the copy will either be replaced or the subscription extended an extra month. War or no war, ROCKS AND MINERALS will continue to print news of mineralogical importance and every subscriber is entitled to the number of copies for which his subscription has been paid.

Peter Zodac

R. & M. A. Member Honored

Raymond R. Hibbard, of Buffalo, N. Y., a member of the Rocks and Minerals Association, was recently honored by the Buffalo Society of Natural Sciences when he was appointed Research Associate in Invertebrate Paleontology.

This honor was conferred upon him on May 26th in recognition of his longstanding interest in the welfare of the Society and the generous gifts he made to the Society's collection.

A very interesting article by Mr. Hibbard, "Conodonts in the Upper Devonian Rocks of Western New York," appears in this issue of ROCKS AND MINERALS.

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The Official Journal of the ROCKS and MINERALS ASSOCIATION

Whole No. 133

CONODONTS IN THE UPPER DEVONIAN ROCKS OF WESTERN NEW YORK*

By RAYMOND R. HIBBARD

Buffalo, N. Y.

INTRODUCTION

Our very finest local microfossils of considerable interest to many, are the conodonts which for many years have puzzled many investigators. However, today they are regarded by many as the teeth of small fishes which flourished in some of the Paleozoic seas of both, this continent and Europe. At several horizons in the Upper Devonian here, specimens of them representing several hundred species and most of them in an excellent state of preservation, occur literally by the thousands in the shales and limestone while in other beds they are not so abundant. Some of the species are already known but many of them are new to science.

Conodonts are black or horn-colored teeth, highly lustrous and striking in appearance. However, when they have been exposed for any length of time and are weathered by acidic agents, they lose their original color and then become white, quite in contrast to the black shales in which most of them are found. Of the many thousands of specimens collected by the writer, few exceed three millimeters in length while most of them are considerably shorter.

The comb and sawlike forms of the families Prioniodidae and Prioniodinidae are the larger and more striking forms met with while the smaller and more abundant specimens are the plate forms of the family Polygnathidae. "These, have a high denticulated median or lateral crest which is often extended stalklike from one end."[1]

The great abundance of conodonts at certain horizons in local formations and the large number of species that occur coupled with the fact that so many of them are new, make them very interesting objects for study under low powers of the microscope. On many of the slabs of shale collected the little denticles are so crowded together that large numbers of them can be counted in the space of a few square inches.

Conodonts, small as they are, have economic value. Their very fine state of preservation makes them useful for subsurface investigations and are of value in correlating geological formations at localities remote from one another. They are among the microforms of fossils sought for by the paleontologists who study the drill cores and who after all, are the ones who decide how far down the drill shall go.

In order to handle the specimens easily under the microscope, a little technique is required. With the aid of a pair of strong cutting pliers, I cut the thin slabs of the shale into small pieces, about ten millimeters square, keeping the denticle as near in the center as is possible. A light red or yellow ink line is then drawn around the denticle so it can easily be centered under the microscope for future study any time. These little squares of shale with the denticle so centered are then placed in glass vials with a cork stopper to keep the specimens clean. A narrow printed label giving the geological formation and the locality,

with a narrow space left blank for writing in with india ink the scientific name and the catalogue number accompanies each specimen.

Upper Devonian formations and the occurrence of conodonts in them

In this paper, formations only of the Genesee, Naples and the Chemung groups will be considered. The Genesee group of the Upper Devonian in the Lake Erie section comprises three formations. These, are in ascending order: the Geneseo black shale, the Genundewa limestone with the underlying Conodont limestone bed and the top member, the West River beds. In all of these formations conodonts have been found. The Naples group in the Lake Erie section, as now understood, consists of the following in ascending order: the Middlesex black shale, the Cashaqua shale, the Rhinestreet black shale and the Hatch shales. No conodonts have been found in the Cashaqua but they occur in the Middlesex and the Hatch beds and in immense numbers particularly in the Rhinestreet shales. Of the Chemung group, mention will be made only of its uppermost member—the Hanover formation. The black bands of this formation supply excellent specimens of conodonts.

Therefore, so far as is known, we have in this section of the state at least seven conodont-bearing formations in the Upper Devonian. The teeth are somewhat scattered through the shales and limestone in some of the formations while at certain horizons in others, they are more crowded together.

The Geneseo formation

The Geneseo, a black shale formation of the Genesee group of rocks, is exposed at only a few places in the extreme western part of the state. The rock is easily distinguished from the black shales of other formations by its more slaty appearance, and, it is the lowest of the Upper Devonian sediments in which conodonts have been found by the writer. An excellent exposure of this bed of considerable interest can be seen along Cazenovia creek where some slabs of the shale quite rich in conodonts have been found.

The Genundewa formation

Only one locality in this area is known to the writer where free specimens of conodonts can be obtained by washing decomposed rock. At all other localities they are found only embedded in the black shales or limestone. The Conodont limestone bed underlying the Genundewa limestone is well exposed at the Hinde locality or as it is better known, the Section One of Grabau, at Eighteen Mile creek near the railroad bridge below North Evans, Erie County, New York. Here, with the aid of a small, steel wrecking bar, large blocks of the Conodont limestone can easily be worked loose and turned over. The underside of the rock at most places along the section will be found to be decomposed to a depth of 1/16 of an inch or more. The under surface of the rock should be carefully scraped with a thin piece of flat metal and as much of the decomposed material in sight gathered up and put into bags for washing in the laboratory.

In the laboratory the bags of decomposed rock should be emptied into a large pan and covered with water to which has been added a quantity of common washing soda and the mass then be allowed to soak for a day or more. The material then should be agitated repeatedly and the muddy water poured off. The process should be continued until the water no longer is muddy and then the residual mass is spread out thin on newspaper to dry. When dry the material is ready for sifting through several sieves of different mesh to facilitate the picking out of the conodonts; tea and coffee strainers are excellent for this work.

However, some of the specimens will be broken in the washing process but perfect specimens, beautifully preserved and representing a good number of species, will be found very plentifully in the washed material. The little teeth are best picked out of the washings by taking a small pinch of the material at a time and spreading it out in a white lined shal-

low cardboard tray or on a piece of white cardboard and with the aid of a hand lens magnifying 12 or 14 times, the teeth are picked out with a moistened camel's hair brush. The specimens can be mounted on the narrow card strip labels already referred to and then placed in glass vials, or, on the standard 3 x 1 inch glass slide, but, preferably on the new type of slide for mounting microfossils, now supplied by some dealers.

Upper Devonian Conodonts—Enlarged 12 times.

Conodonts occur in the Genundewa limestone along Eighteen Mile creek, along the South Shore Cliffs, Cazenovia creek and at other localities in the western part of the state where this formation is exposed, but, at no place are they by any means common in this particular formation. In this case specimens are to be had only on fragments of the rock which is rather hard and difficult to work.

The West River formation

Above the Genundewa limestone rests the West River beds of dark colored, soft shales with some thin limestone layers near the base. This formation, the top member of the Genesee group, is of much interest and its interbedded dark shale layers repays careful study for in them rare conodonts have been collected from an exposure along Cazenovia creek. The formation shows in several of the creeks in the lake section of Erie county.

The Middlesex formation

The Middlesex shale is a rather hard, black bituminous shale which weathers down into thin, rusty sheets known as paper shales. It is not a very thick formation and is the lowest member of the Naples group and field work to date discloses the fact that conodonts occur in the upper several feet of the formation. Good exposures of the shale are to be seen in the cliff at the mouth of Pike creek; along Eighteen Mile creek and a very fine exposure of it is to be seen along Cazenovia creek.

During the summer of 1935 while checking over the Eighteen Mile creek sections of Grabau, the writer came across an enormously large, mass of this shale at the base of Section 5. It had fallen down from the cliff above, and apparently only a short time before, as the entire mass showed very little weathering on its upper surface. There was a large excavation left in the face of the cliff where the rock had slid down so that there can be no doubt about its age. However, upon breaking up the huge mass of shale, several trips were necessary to secure the many specimens of conodonts that were found at one level which it seems to the writer, was not more than a foot or two from the top of the formation.

The Cashaqua formation

The Cashaqua shales, so far as is known, have not yielded any conodonts although inasmuch as the formations below and above them have furnished specimens, it is confidently believed that more diligent collecting with conodonts particularly in mind, this formation, too, will supply specimens of the little teeth but apparently never in such abundance as they occur in some of the other formations.

The Rhinestreet formation

Next in this sequence are the thick beds of black, highly bituminous shales of the Rhinestreet formation. Very fine collections of conodonts have been obtained by the writer back in the years of 1923 to 1926 from its basal layers at the celebrated Shaleton, New York, locality. Here, the teeth were found in immense numbers, very perfect and many of them larger than any met with in any of the other formations. This locality, at one time unquestionably the best we had for conodonts, has not been very productive in recent years. However, there is fairly good reason to believe that quarry operations in the shale pit at Shaleton in the future, will improve conditions so conodonts can be collected there again in large numbers. However, this locality is being carefully watched from year to year.

The Shaleton conodonts back at the time they were collected were of such exceptional interest that large quantities of slabs of the shale containing them were sent immediately to Dr. Ray S. Bassler at the U. S. National Museum which resulted in an excellent paper on these forms by him and Dr. Ulrich. In this paper a classification was laid down which paved the way for future research on the subject. Sometime later the writer found time to study some of the many species collected and his paper appeared in the March, 1927, issue of the AMERICAN JOURNAL OF SCIENCE. In this paper 33 species of conodonts were described

and illustrated, 31 of them for the first time.

After these two papers made their appearance it was then possible to apply names to many species of the teeth and it occurred to the writer at the time a very good idea to get named sets of them into various museums throughout the world. Accordingly, this was done and named sets were sent to museums in the United States, Canada, Esthonia Czechoslovakia and I think the records will show Australia, too. Many of the Shaleton conodonts still await description.

Fortunately a new locality for Rhinestreet shale species has been discovered along Cazenovia creek about 2½ miles south of Springbrook that surpasses the Shaleton locality in the way of abundance of specimens but most of these however, are somewhat smaller. This is our Number One locality at present for well preserved conodonts and here approximately ten feet above the base of the section, hundreds of thin slabs of the shale estimated to hold more than ten thousand specimens of the teeth and representing several hundred species, have been collected by the writer and are safely stored away. Perhaps at some time in the future this great assemblage of striking forms of conodonts can be described to science.

The Hatch formation

Overlying the Rhinestreet shale is the Hatch formation which consists of a series of light gray shales, some sandstone layers and some beds of black bituminous shale containing concretions, some of considerable size. A few localities are known where these rocks are exposed but no collecting has been done by the writer in them so that nothing can be said at this time about the distribution of conodonts in them. Nevertheless, the teeth have been reported as occurring in the formation and these probably will be found in the black bituminous shale layers.

The Hanover formation

The Hanover formation consists of beds of shale with some sandy layers and all of about the same lithologic character as the Angola below. The formation also contains several thick bands of black bituminous shale which have yielded some exceptionally fine conodonts, some of the species occurring in the Rhinestreet some distance below. A collection of many specimens have been obtained from an exposure of one of the black bands of the formation along the south branch of Eighteen Mile creek at Cromer's saw mill, approximately two miles downstream from Clarksburg, New York. In the black bands of this formation individual specimens of conodonts are scattered throughout the rock and much labor is required to split up quantities of it in order to secure a collection of fairly good size.

It is quite safe to say that conodonts will be found at many localities here in the western part of the state where black shales are exposed, if the little teeth are diligently searched for. The writer hopes that what all has just been said about them will stimulate others to go into the

The author (center) with two field assistants collecting Middle and Upper Devonian fossils along the shore of Lake Erie, south of Eighteen Mile Creek, Erie County, New York.

field with this class of fossils in mind and to try to discover other rich conodont horizons in local formations. Every inch of the shale rock from the base to the top should be very carefully examined whenever this is possible at any locality being worked. Some horizons very rich in conodonts have been discovered by the writer by this method of field work and much yet remains to be done. Conodonts being small are easily overlooked by the average collector and so it is suggested that a hand lens of rather strong magnification be carried into the field to detect them.

Some of the statements concerning the great numbers of conodonts that have been found in some of these formations might sound somewhat sensational but they are absolutely true facts as demanded by science. Many named specimens of Ulrich and Bassler's species and the types of two papers, one published and one unpublished, together with an immense amount of unworked material collected from these formations, are contained in the collections of the writer at Buffalo, New York, where they can be seen by anyone interested. These collections are the result of field work extending over a period of fifteen years.

Moreover, the writer is now in possession of a collection of conodonts which not only represents a number of local formations, but, which come from numerous formations and localities in the United States and from as far east as Esthonia, all of which however, are of great interest and of inestimable value for future research on the subjcet.

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* This paper was read for the writer by Mr. Irving G. Reimann at the March 25, 1942, meeting of the Geology Section of the Buffalo Museum of Science. Additional notes on western New York Upper Devonian conodonts are to be found in a paper published in the December, 1928, issue of this Journal.

1 Ulrich, E. O., and Bassler, R. S., 1926 A classification of the toothlike fossils, conodonts, with descriptions of American Devonian and Mississippian species. Proc. U. S. Nat. Mus., vol. 68, p. 43.

V Stands for Victory

There is in the possession of one of our dealers, A. J. Alessi, of Lombard, Ill., a 2 x 2 inch specimen which has created considerable interest. It consists essentially of white, coarse crystalline calcite on a dark gray (almost black) limestone. Imbedded in the limestone is a small mass of golden-yellow platy orpiment; imbedded in the calcite are two short "bands" of bright red realgar which unite to form a perfect V.

When minerals, which are the foundation of the earth, turn up in America with "V for Victory" insignias on them, then an overwhelming victory over our enemies is not far away.

This prize-specimen, recently received, is from the world-famous mercury mines of Mercur, Utah. The specimen is *not* for sale, says Mr. Alessi.

Rocks and Minerals
Free Samples Fund

Founded to cover cost of free copies of the magazine to be distributed during the New Jersey Mineral Show to be held later in the year.

Contributions Received From

Rocks and Minerals	$10
John Albanese, Newark, N. J.	$10
Miss Violet Miller, Brooklyn, N. Y.	$ 2
Miss Evelyn Waite, Crestwood, N. Y.	$ 1
Mark M. Foster, Denio, Ore.	$ 2
Total	$25

PLEASE ANSWER?

By DONAL HURLEY
Little Falls, N. Y.

Mineral collectors can be divided into three general groups: those who have the time and money to take extensive field trips; those who can purchase desired specimens without serious thought of money; and those who must both prospect within a limited distance of their home and who must purchase with an eye on the pocketbook. Members of this latter class usually become great traders of mineral specimens in order to build up their collections. Thanks to a grand governmental mail service, an exchange of letters can result not only in the trade of fine mineral specimens but also bring such complete information as to create the sense of your having actually visited the field and personally collected the minerals. Of course, even we traders purchase from dealers and because of our limited dollars we appreciate the excellence of our dealers' specimens.

The one dark cloud in this trading method of mineral collecting is that thunder-head which looms on our horizon and which we recognize as those many letters we have mailed out but which were never answered. It seems there are those in every field of possible mineral exchange who do not consider your letter worth the time and trouble to bother writing a reply. This neglect to answer might be attributed to the unfortunate situation that the threads of information are often very slender from which you write a letter of inquiry as to certain minerals found in a specific locality and very frequently you are unable to write any definite source for the contact you desire but must seek more complete data from such acceptable possibilities as a community organization, the public library, museum, school, college, postmaster or other likely source. But too often there is no answer to a first letter, a second letter—or a thousand letters if you had the patience to write them. That is discouraging—and disgusting!

In an effort to obtain a desired specimen from a certain locality, I have written five letters to the president of a mineral society which considers itself important, two letters to a college, and two letters to a collector without receiving a single answer. All letters had return addresses and as none came back I presume they were all delivered. I can not think that all those sources were unable to answer because the State in which they are located is one of the oldest in the Union and the rate of illiteracy is very low.

Seeking information from another source, I wrote two letters to the head of a State department on the recommendation of the curator of a large museum and have long ago given up watching the mails for my answer. A check of my records show that at some time along my mail route there have been failures to answer letters by every source used even to dealers. In partial excuse (but a poor one) let me say that I collect quartz crystals only.

Courtesy, at least, dictates an answer!

Let us look at the other side of the record book.—what have letters brought in reply The best possible answer to that question is an examination of the quartz crystal specimens in my cabinet. Big crystals and little crystals, single crystals and twins of many kinds, mineral inclusions and associations, rock crystals, smoky, milky, citrine and amethyst—all here thanks to the cooperation of fellow traders. Represented in trade is material from a ten year old boy and an eighty year old man; several female rock hounds;; farmers, doctors, lawyers, a senator, a congressman, schools, colleges, museums—a specimen from North Dakota sent me by a man from Brooklyn, N. Y.; material from Texas because of a friend in Maryland; Mexico and Arizona specimens traded by a California collector—surprises, surprises, surprises! All because a letter was written and a letter sent in answer!

(In some instances self-addressed envelope or card, or sometimes only the necessary postage, was enclosed with a letter of inquiry. But that never seemed to make any difference—those answered did so even with nothing enclosed. I experimented along that line).

HUGE VEIN NEAR PEEKSKILL MAY BE NICKEL-BEARING!

About 3 miles north of Peekskill, N. Y., on the old Owens farm (now the property of the Graymoor Friars) is a large vein of pyrrhotite. In 1874, Henry Williams, an English miner who was then employed at the nearby Croft Iron Mine (now abandoned), dug a small pit into the pyrrhotite under the impression he had found magnetic iron ore (pyrrhotite is slightly magnetic).

In 1910 Mr. Williams discovered molybdenite in the pyrrhotite but nothing was done until 1914 when Mr. Eugene Owens dug another small pit about 130 feet north of the one that had been dug for iron. The pit failed to show much molybdenite and so the project was abandoned.

In 1934, Peter Zodac, Editor of ROCKS AND MINERALS, made his first visit to the locality. This and succeeding trips showed no iron ore but much pyrrhotite. At the two pits pyrrhotite is exposed as a very tough massive ore whose chief impurity is a little greasy quartz. Molybdenite occurs as small flakes sparingly disseminated in the ore.

Examination of the surrounding terrain disclosed the fact that the pyrrhotite is apparently present as a huge vein that warrents further investigation. The vein outcrops 25 feet south of the Catskill Aqueduct property wall (New York City Water Supply) where it is 30 feet wide; 125 feet to the south at No. 2 pit it is 60 feet wide; 130 feet further to the south at No. 1 pit (dug for iron ore) it is 100 feet wide; and at its furthest southern point, 90 feet further, it is 170 feet wide. Unfortunately the main mass of the ore body does not crop above ground, small patches only are present which are flush with the ground. Trenching would be necessary, therefore, to determine the full length and width of the pyrrhotite. If the patches represent the true limits of the vein, then the ore body is at least 345 feet long and averages 90 feet in thickness.

Examination of the nearby Aqueduct property, where excavations had been made 800 feet north and also 3000 feet east of the Owens farm vein, disclosed a number of huge masses of solid pyrrhotite—identical in character with that of the main ore body. This would indicate that the vein must extend for considerable distance.

The ore body of the celebrated pyrrhotite mine on Anthony's Nose[1] (now abandoned), about four miles to the west, is only 20 feet in thickness and was mined for 180 feet on the strike; the Owens farm ore body is 90 feet in thickness and 345 feet long (estimated from rock crops) and is, therefore, about nine times larger.

In 1941 a small specimen of the Owens farm ore, selected at random, was sent to Lucius Pitkin, Inc., 47 Fulton St., New York City, for a spectrographic analysis. Their report, dated April 24th, 1941, is as follows:

Qualitative Spectrographic Estimates

Nickel	.X
Chromium	.OX
Molybdenum	.OX

Note: .X, .OX = concentration of the elements estimated to the nearest decimal places—e.g. .OX = .01-.09% estimated.

The nickel appears to be in the lower range of the first decimal place.

Although the nickel content in the sample is very small, (Anthony's Nose material averages 0.3%), a thorough investigation of the ore body might disclose a much higher percentage.

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1 *The Anthony's Nose Pyrrhotite Mine*, by Peter Zodac. ROCKS AND MINERALS, June, 1933, p. 65.

THE CHARMED CIRCLE

By A. C. HAWKINS

If you told them that you could bend a rock into a circle with the pressure of one finger, they wouldn't believe you. Yet here it is.

A variety of sandstone with grains so loosely bound together that a strip of it like those illustrated, 21 inches long, 1½ inches wide, and about ¼ inch thick, will bend without breaking into an arc whose curve is 3 inches out of a straight line, is a specimen that interests everyone, whether a mineralogist or not. "Wigglestone," you will agree, is a good name for this "flabby" or "limber" geological formation, as you hold it loosely by one end and watch the other end wave back and forth in the air.

The ten strips shown in the illustration have been curved, with very little pressure, to make a complete circle. It is evident that, if we were able to obtain a single continuous strip of a length equal to that of this ensemble, it might readily be bent into just such a circle, so that it would, as a famous author has expressed it, "meet itself coming back."

The reason for the flexibility of this sand-rock has been the subject of much conjecture and some investigation. It is nearly pure quartz, with an admixture of tiny mica plates. Some mineralogists have thought that the mica might cause flexibility by allowing the grains to move backward and forward with a gliding motion. But this does not seem to be the cause. According to the position of the rock in the geologic column, it is of Cambrian age, and represents an ancient beach or delta deposit. But its grains have been much altered in shape since its deposition, due to the removal of silica from the outside of the quartz grains, and its deposition in new positions in the pore spaces between them. Dr. Clarence S. Ross, of the U. S. Geological Survey, who has made a microscopic investigation of thin sections of the flexible sandstone, reports that there seems to be a sort of ball-and-socket arrangement of the grains against the material surrounding them. Thus the movement might be likened to that of the knee or elbow.

The locality where this is found is in western Stokes County, North Carolina. The heavy sandstone beds cap a mountain which rises a few miles north of Pilot Mountain, not far from Winston-Salem. There is plenty of it available on Route 66 at the place called Gap on the road map, at the top of the divide, 12 miles north of Rural Hall.

Flexible sandstone is well known as a mineralogical curiosity. Material of even greater flexibility has been found in India.

This is probably one of the most remarkable mineralogical photos ever attempted and a thing of beauty.

The circle is made with 10 strips and the bow-knot with 9 strips of flexible sandstone.

The picture is a double exposure, a combination of two arrangements.

RECENT FINDS OF MINERALS IN CENTRAL CONNECTICUT

By L. W. LITTLE

The pegmatite quarries of the Central Connecticut Valley have always been famous for the fine mineral specimens found associated with the feldspar and mica for which they are operated. But it seems to the writer, as he recalls the results of his collecting at these quarries in the summer and fall of 1941, that more interesting specimens were found during that year than in any other one of his more than fifty years of collecting. And he is tempted to jot down a list of some of the more outstanding of these, thinking it might be of interest to other collectors, especially those who have visited these quarries, and perhaps been even more successful in their collecting.

Four of these quarries were visited: The Schoonmaker and Strickland on Collins Hill in the town of Portland, the Andrews near the Portland-Glastonbury town line, and the one at Rock Landing. Of these the Schoonmaker, which is really a mine, furnished the greater variety of interesting specimens. This and the Andrews Quarry are being worked at the present time, and trips were made to these more than to the others.

Schoonmaker Mine

One of the first minerals of especial interest that was found at this mine last summer was amblygonite, and it was a large sized block of white or pinkish color and quite pure. But as it looked very much like the albite that was so plentiful there. and as amblygonite had never been reported from that mine, doubt was had as to its identity, so only a few pieces were broken off and taken home for further examination. On testing for intumescence, etc., it was found to be amblygonite, and within a few days another trip was made to obtain the rest of the specimen, but on reaching the place it was found to be gone. Probably some other collector had recognized it and taken it away. Subsequently two more fairly good specimens were found, these having a small amount of light green tourmaline with the amblygonite.

Soon after this, lithiophilite began to appear on the dump. This was in albite with some spodumene and lepidolite, and mostly of a deep reddish brown color, though some was of a lighter brown. It was found sparingly for about a month, and since then none has been seen. Incidentally it might be mentioned that each of the common minerals found at this mine seemed to appear for a short time and then were never seen again, as though they only occurred in small amounts that were soon exhausted, or possibly in veins which were cut across and passed by.

During September and October much interesting material was thrown out on the dump. Fluorite was found in two forms; as dark purple cleavage pieces, and as nodules that were covered with a grey film, but that fluoresced a beautiful lavender blue. The cleavage pieces were not fluorescent. The fluorite nodules were generally accompanied by bright cubes of pyrite which varied in size up to ½ inch on the faces. Some of the specimens had the cubes of pyrite spread thickly over a base of crystallized albite, the crystals of albite being about the same size as those of the pyrite, making very showy specimens. All these latter specimens appeared to have been formed in cavities.

Late in the fall a considerable amount of gemmy pink and green tourmaline was found. Some of the crystals had a deep pink center and were colorless on the outside, and some were pink at one end and green at the other. These latter were broken across, at least every quarter inch, and the two colors seemed to be end to end instead of grading into each other. Some occurred in an unusual form, as pellets of a quarter inch or more diameter in a very hard quartz rock, and this required such heavy pounding that the tourmaline was apt to fall out, leaving round or oblong cavities. A few of these pellets were saved and might be cut into gems. Some opaque tourmaline was found in triangular crystals of about

½ x 3", which were a yellowish green on the outside and greyish white inside. As they were in quartz, it was difficult to get them of much length.

Plenty of the other minerals were found that are so common and plentiful at this mine, but that help brighten up a collection; like the lilac colored lepidolite, the combination of deep green manganapatite and red massive garnet, and spodumene, much of which is changed to green and chocolate-brown pinite, and pink kunzite.

Strickland Quarry

Although this quarry has not been operated for several years the old dumps will repay a visit, especially if one goes prepared to dig into them. Last summer some lithiophilite was found lying on the dump where someone had dug it out and overlooked it. The writer has a trick of visiting the old dumps just after a hard rain and picking up the specimens that others have dug out and missed finding because they were covered with dirt. The lithiophilite was of a salmon color, and a specimen was sent Dr. F. H. Pough of The American Museum of Natural History in New York, who pronounced it. "By far the best lithiophilite I have seen from the quarry." Among other specimens that were found without digging was a crystal of pink beryl, which, though somewhat damaged, was of interest, being semi-transparent in places. Also part of a large beryl crystal which had zones of green, yellow, pink, and white, in equal parts. Some bright pink montmorillonite was found, but this gradually faded to a greyish pink, even though kept away from the light. Some citrine quartz of fairly good color and transparency was also found. If the parties who dug these cut for us should happen to read this, we wish to thank them.

On April 27, 1941, Mr. and Mrs. Frank Wilson of East Cheshire, Conn., Prof. and Mrs. Mrs. F. A. Ferguson of the University of Connecticut and the writer visited this quarry, and Mr. Wilson dug out a very nice smoky quartz crystal which enclosed acicular crystals of hornblende or tourmaline. It was about one inch in diameter by two long, transparent, and had one perfect termination. The rest of the party dug all day in the hot sun but found nothing of interest.

Andrews Quarry

Of the minerals found at this quarry, the most notable both as to quality and quantity were autunite and torbernite. These sometimes occurred on the same specimen and sometimes separately. The autunite has a very bright fluorescence, and compares favorably with that from New Hampshire or North Carolina.

The torbernite sometimes covers the specimens so thickly as to give them a solid green appearance. Uranophane was sometimes found with the autunite. On May 9, 1942, the writer visited this quarry and found some autunite in an unusual form, the flakes being arranged in rings, with a center of uraninite or some other non-fluorescent mineral, so that when viewed under an ultra-violet lamp they looked very much like eyes. One specimen had two of these "eyes" about two inches apart and with another smaller one between them and a little below, and under the lamp looked enough like an owl's face to be quite ludicrous.

But to go back to 1941. Among other minerals found during that year were the following: Pyrolusite in dendritic form, pyrrhotite in platy iridescent masses, and stellated muscovite arranged in circles of about an inch or more in diameter. On September 25, Mr. A. B. See of Ridgewood, N. J., found a good specimen of amazonstone of deep color. He was accompanied on the trip by Mrs. See, his son Richard, and the writer.

Rock Landing Quarry

This quarry is rather of an aggravation to collectors as there is a broad vein of autunite down the face of the ledge in plain sight, but only very small pieces can be obtained, as it has been worked very thoroughly by collectors during the eight or more years since any blasting has been done. However, Mr. Richard A. Schooner of East Hampton, Conn., succeeded in breaking off quite a large piece and obtained some good specimens from it. The autunite in this quarry differs from that at the Andrews Quarry in that it is gen-

erally associated with about equal parts of uranophane. As the color here of both is about the same, the only way each can be identified is with an ultra-violet lamp, when of course the autunite fluoresces, while the uranophane does not. Some columbite can be seen in the ledge near the autunite.

A few specimens of iridescent smoky quartz were found which showed a fine play of colors when placed so the light fell on them at the right angle, or better still, in the sunlight. This was probably caused by an infiltration of limonite as the quartz broke with a platy fracture.

At the time this is written—June, 1942—the outlook for collecting trips for the coming year is not so good, with the rationing of gas, but we hope conditions will improve with new pipe lines and barge canals.

An item seen in one of the magazines recently might apply to the Japs and Germans if they should try to invade this country. A colored man was lying in the sun outside his cabin door, when someone rushed up to him and excitedly told him that a big wildcat has just gone into the back door where his wife was. The man did not seem to be very much disturbed but drawled: "If a wildcat done gone in where my wife is, he got to get out de best way he can."

DUSTPROOF DISPLAY BOX FOR DELICATE MINERALS

By GUNNAR BJAREBY

Undoubtedly many collectors have found that most, if not all, delicate mineral specimens cannot be cleaned thoroughly, once dust has collected on them. These include a number of minerals with acicular crystals, loose fibers, earthy species and others which should not be handled. All of the hygroscopic species should never come in contact with water or moist air. On the other hand some species should have a fairly constant content of H_2O, otherwise they desiccate and crumble.

The average collector cares little for specimens which must be lacquered or kept in sealed jars and bottles. But to the advanced collector, who collects species rather than pretty stuff only, the hygroscopic and other delicate species have always presented a difficult problem in the display and preservation of the specimen in question. There are, however, several means to cope with the problem. Specially designed glass boxes, boxes with glass tops, square bottles, jars, etc., may be used. But aside from the first mentioned the others would be comparatively clumsy. For example, a delicate sulphate specimen with thousands of hair-fine crystals would not show up in its full beauty in any of these containers.

The writer is using Lucite, a new plastic material, which lends itself admirably to the making of airproof display boxes. It comes in various thicknesses and is clearer than most glass. It is easily cut and quickly joined by means of Acetone, a fast acting solvent. The heavier sheets break, if bent at a right angle, but a curvature is possible, if the piece is bent while immersed in hot water; this is not recommended where accuracy is important. The materials required are: a sheet of Lucite, gauge 20 or heavier, a small bottle of Acetone, parafine, white Duco enamel, 1/4" plywood, 1/8" wood, strips of wood 1/8" thick 3/8" wide, 8—1/2" screws to each box; a steel square, a small paintbrush, an eyedropper and a cutting knife. Do not use scissors.

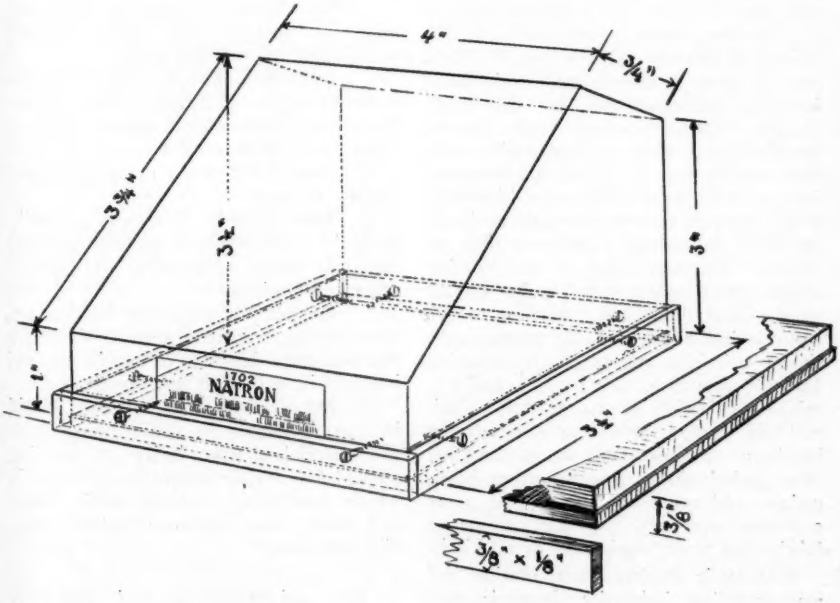
Accurate cutting is necessary in order to insure an airproof top. The measurements on the drawing are arbitrary, some allowance must be made for the thickness of the sheets. The joining is easy, if done carefully, but practice on some small strips is advisable before starting the box itself.

Place a section of the Lucite in the inside corner of the steel square, take next the piece to be joined to the first piece and moisten it lightly on the very edge with as little of the Acetone as possible.

These pieces join together rapidly and after a few seconds they can be held at an angle. Take a small drop of Acetone and squeeze it out in the upper corner of the two joined pieces. It flows instantly along the joint and after a short while the pieces are joined firmly and the third piece can be attached. All joining should be done from the inside and as little Acetone used as possible, otherwise it will spread out and ruin the section.

When all the pieces are joined together fill the top with water; if it does not leak it is ready for the plinth. Plywood of ¼" thickness is best, because it is least apt to warp. Fit a piece of it tightly inside the top but do not force the joints. Fit a slightly larger piece of ⅛" wood as a base for the box. These two pieces of wood should be nailed or screwed together. Four strips of ⅛" wood should be fitted outside the top at the base. After all fitting is completed, the wood painted and dry, dip the base in hot parafine, clean the inside of the top with cotton, get the specimen ready, prop it up or fasten it to the base if practicable. Put the top on and dip the bottom in parafine, fasten the strips of wood outside the base with two screws in each piece and dip the entire base in parafine and the specimen is sealed up in an airtight, dustproof and handsome display box, through which it may be seen without any distortion or discoloration. The joints do not show more than an ordinary pencil line.

The writer has made several variously shaped boxes, but the accompanying design is best, because no joint lines cross in front of the specimen inside. The label can be attached to the outside. If larger specimens are to be placed in this kind of a box, a heavier material should be used.



Dustproof display box for delicate minerals.

(Drawing by the Author)

NEW EDUCATIONAL MOTION PICTURE FILMS RELEASED BY THE U. S. BUREAU OF MINES

"Lubrication," the latest educational motion picture film in sound, prepared in cooperation with an industrial concern, has just been released by the Bureau of Mines, United States Department of the Interior. This film, which takes about 30 minutes to run, reveals in pictures, diagrams, animated drawings, and by voice the need for lubrication and methods of lubricating the great variety of machines which make the materials and supplies of war.

The film shows the necessity of lubrication to overcome friction in the moving parts of machinery. It demonstrates varying degrees of friction; first, dry hands rubbing together, then successively freer movements when hands are moistened with water, soap, and finally oil. Useful friction, which enables locomotive wheels to obtain traction on the rails to pull heavy trains, and in braking systems to stop the motion of vehicles and machines, is shown and contrasted to the wearing away of smooth surfaces in metal bearings of machinery by destructive friction. "Solid friction," two surfaces touching each other, is illustrated by animation of a man pushing a flat-bottomed boat on a flat land surface; "rolling friction," surfaces separated by rollers, is exemplified by a man pushing a boat on rollers. Further reduction of friction when water separates the under surface of the boat from upper surface of the earth is indicated. Ensuing photography shows primitive means of transporting loads by dragging, then by cart, and primitive lubrication by use of tallow, animal fats, or crude asphalt on rude wooden bearings. Centuries later, up to the Civil War period, these same means of lubrication, and sometimes crude oil from seepages, were still the chief means of lubricating power equipment of all kinds.

Progress in modern transportation and manufacturing industries demands new and more tenacious lubricants to withstand speed, pressure, and heat that destroys animal fats and vegetable oils; these lubricants are obtained from petroleum. The film demonstrates operation of a shaft turning in a dry bearing and producing enough heat to melt bearing metal, and then illustrates prevention of this condition by use of oil lubricant. It shows various types of oil for different uses—light oil for light, high-speed equipment; viscous oil for heavy, slow-speed machines; and specialized lubricants for airplanes and for delicate mechanisms, such as watches. Crude petroleum is a mixture of many different hydrocarbons, and oils of different viscosity are produced because the molecules in crude oil are of many different sizes; the smaller ones produce light, free-flowing or thin oils and the larger produce heavier oils. Here the picture displays the wide range of petroleum lubricants and tells the story of lubrication in the terms of use in six main classes:

1. Spindle oils to lubricate machinery with high speed but little pressure, such as spindles in spinning mills.
2. Internal-combustion-engine oils for different types of engines, such as are found in automobiles, airplanes, military tanks, and oil-burning Diesels.
3. Gear oils for the many types and shapes of gears.
4. Steam-cylinder lubricants to withstand the extremely high temperatures found in steam locomotives and stationary steam engines.
5. Greases for extremely heavy duty, slow-moving machines, such as those for ball and roller bearings in bulldozers, and journals in ball mills and locomotives.
6. Machine-tool lubricants used to aid in cutting metals by conditioning tools and materials that are being cut. Closing scenes give further examples of ways in which lubrication reduces work, wear, and waste, and conserves metals, fuels, oils, and power.

"Heat and Its Control" and "The Story of Rock Wool Home Insulation," two new educational motion picture films in sound, produced under the direction of the Bureau of Mines, United States De-

partment of the Interior, in cooperation with a large industrial concern, are now ready for distribution. The films tell the story of heat insulation as a means of conserving the Nation's fuel supply in homes and industries and thereby contributing to our war effort.

The motion picture, "Heat and Its Control," emphasizes the importance of controlling heat and the many roles heat plays in present-day life from driving locomotives and turbines to changing the structure of ores and metals. In contrast, the destructive power of unharnessed heat is depicted by the seething lava of the volcano and the desert wastelands. From a historical standpoint, the film pictures the worship of sun and flame in bygone years and the research by James Watt, who perfected the steam engine.

By animation, the picture then describes the three methods of heat transfer. In this series, coal or oil are transformed into heat, steam is created and the heat energy is shown passing to boiler tubes by radiation and convection and through the tube walls by conduction.

The heat-loss due to lack of insulation is described in detail and the manufacture of magnesia insulation then is shown. This pictures the calcination of dolomite in vertical kilns, slaking in water, precipitation of magnesium carbonate by boiling, addition of asbestos fiber, molding, drying, trimming and cutting to size. Also described is the fabrication of rock wool insulation from solid rock and the steps of charging the cupola furnace, reducing the charge to white heat, pouring the molten material upon a blast of high-velocity steam which rends the material into fine strands of thread-like fibers which cool and solidify. Use of this finished material in homes and in industry then is illustrated.

Another portion of the film shows the process of fabricating asbestos into paper. Here the milled asbestos fiber is mixed with water formed into sheets and dried. Next, the motion picture describes the mining of diatomite and the manufacture of bricks for insulating furnaces. This process is traced from the quarrying of the raw material to the firing of bricks in a tunnel kiln. Closing scenes show uses of insulation in covering boilers and for lining rotary kilns and its importance to the petroleum and iron industries.

The second sound motion picture, "The Story of Rock Wool Home Insulation," describes the problems encountered by a young couple who have been offered a drafty house as a wedding gift. While the man and woman are debating the advisability of accepting the offer, a friend tells them the structure can be made comfortable by adequate insulation. Of interest to every home owner is the description presented regarding the cause of draft and loss of heat due to lack of insulation.

A replica of a single wall space is shown and this is subjected to temperature changes encountered during winter and summer. In the film, the friend describes adverse conditions which result from uninsulated walls during warm and cold seasons and suggests rock wool as the best insulating material for his friends' dwelling.

Succeeding scenes show the manufacture of rock wool insulation. The product is manufactured into nodules for houses already built and into bats for new homes under construction. Other portions of the motion picture show a building being insulated with rock wool by the pneumatic method in which rock wool nodules are blown into every open space in walls, around conduits and switches, around window frames and elsewhere to form a protective blanket.

Copies of these three films, in 16-millimeter sound, are available for exhibition by schools, churches, colleges, civic and business organizations and other similar groups. Applications for the films should be addressed to the Bureau of Mines Experiment Station, 4800 Forbes Street, Pittsburgh, Pennsylvania, and should state specifically that the borrower is equipped to show sound films. No charge is made for use of the films, but the exhibitor is expected to pay transportation charges and for loss or damage other than normal wear.

A SECRET OF THE LODESTONE EXPOSED

By PETER ZODAC

Lodestone is a variety of magnetite which shows polarity. If a specimen is hung by a thread and allowed to come to rest, its north-seeking pole will always point north (magnetic north). The thought has often occurred to the writer —if a lodestone is actually in place in the ground, its north-seeking pole must point north (magnetic north)! But does it?

Good lodestone specimens are almost always found loose on the ground and these are the ones sold to collectors. Even if one was carefully collected (which may have lain on the ground for thousands of years) no one can tell if it had been undisturbed or recently moved; they are, therefore, unsatisfactory for our purpose. Lodestone found in place, if we are to judge from lack of printed reports, appears to be unknown.

About 10 miles north of Peekskill, N. Y., is a group of abandoned magnetite mines known as the Sunk Mines. One of these, the Canada Mine, consists of a series of pits sunk in the vein that parallels the adjacent Seven Mile Road. At one point in this mine (in what is now Fahnstock Park) the remnants of the vein outcropping consists of massive lodestone but not of strong quality. When hammered, the lodestone powders up and attaches itself to the hammer as small bunches of fuzzy magnetic strings. The hammer soon becomes magnetized so that it can later pick up tacks, small nails, etc.

Even though the outcropping lodestone was weak, the deposit was of considerable interest as it represented the first occurrence actually found in place by the writer. Tre strike of this particular vein is approximately east and west and its dip is about 50° south. The occurrence allowed the writer to settle the question—how does its north-seeking pole lie in reference to the magnetic north?

If this was to be determined, the lodestone had to be marked and taken out carefully so that its position when in the ground could always be determined later. At least 12 specimens from various parts of the vein were chosen and before extracting an arrow pointing north was marked on each. However the lodestone crumbled so easily that only five samples could be used as representative.

These five samples were later carefully suspended by fine thread and allowed to come to rest (suspended all night). The specimens were hanging in a room where no iron, etc., was present to act upon them and they were suspended at some distance apart from each other and each about an inch above a table on which was fastened a sheet of paper bearing an arrow pointing north (magnetic north). But not in even one instance did an arrow marked on a specimen coincide with the arrow on the paper underneath! Two arrows on specimens pointed due south; one southeast; another southwest; and the last, due west.

Something was radically wrong! Why didn't they point north? Tests were then made on a compass and again results were unsatisfactory. The arrow-pointed ends of each lodestone not only attracted the north-seeking pole of the compass but the south as well—yet parts of the lodestone would repel the needle. Some point on the lodestone had to be the north-seeking pole but where was it? It was finally found but it was not a point. *The entire surface that had been exposed to the air in the vein formed the north-seeking pole while its opposite face which had been embedded in the rock formed the south-seeking pole!* This is all the more remarkable when the fact is brought out that though the samples were rather thin slabs, 3 or 4 inches long and about ½ inch thick, the faces of each slab formed the poles. (On the average lodestone the poles were always found at the extremities).

It had been the writer's belief that the north rim of the vein would contain the north-seeking pole and the south rim the south-seeking pole. If the above samples are true representatives of actual conditions, then the entire exposed surface of a vein, no matter in what direction it is facing, is the north-seeking pole of any lodestone while the south-seeking pole is embedded in the rock mass beneath!

THE MINE IN THE ATTIC

By HORACE W. SLOCUM
Philadelphia, Penn.

It would probably be much closer to the truth to call it Treasure Trove. In any case it yielded treasure, and what else could a mine be expected to yield? Even the poorest ones at some time must have yielded a treasured hope.

The whole thing started in the winter when slush and cold turned us from the pleasures of pick-hammer prospecting to the less arduous tho non the less satisfying pleasures of prospecting thru back numbers of ROCKS AND MINERALS, THE MINERAL COLLECTOR and THE AMERICAN MINERALOGIST for notes and articles which we deemed could be used in finding new (to us) locations at which we might collect next summer.

Whole articles were lifted from some pages and parts of articles from others, even a significant sentance might be added to notes previously taken from other sources. All were carefully copied in long hand, with the hope that some day this labor would lead us in the paths of pleasurable collecting.

Due to the fact that the library of the Philadelphia Academy of Natural Sciences closes at noon on Saturday, and that the writer was employed thruout the week, it can be seen that many a Saturday morning was spent pouring over the old records.

All of which seems very remote from any mine in any attic. But as trails lead to paths and paths to highways so did all this lead us to the idea that Northern New York State must have been in times past a "Collector's Paradise" just as Professor Valiant had called it. For time and again we read his article of that title running thru several copies of the *Mineral Collector*[1] and tho his directions were far from specific, and tho it was at least 50 years since he had been there, we copied the whole story into our notebook.

Professor Agar's article[2] on the mineral localities of St. Lawrence County was far clearer as to the whereabouts of the locations mentioned tho he could have used two more coordinates and saved a'l who came after a lot of rough searching. This article, too, was copied into our notebook and unquestionably settled the problem of where our next vacation was to be spent.

"Next summer," we promised ourselves, "we'll take our two weeks in Northern New York and try to track down some of these old localities and see if anything is left there worth collecting." Even if nothing is now to be obtained, these places have been justly famous in the past and pictures and records should be kept in order that the exact spot on this earth's face from which came these breath-taking specimens may never again be lost to human knowledge.

Ah, yes, many a rainy spring evening we dreamed of standing on the ridge at the Reese Farm in Richville, N. Y., and seeing the pits in the white limestone as described by Professor Valiant. Perhaps there would be one specimen of the brown Tourmaline left. Perhaps one that no one else had thought good enough to take home. That would be satisfactory to us. That and the knowledge that we might get a picture of the place and spot it on our map so that it might never again be lost. Dreams? Yes indeed. Dreams that we'd find the Danburite locality in Russell, N. Y. Dreams that we could locate the hillside in Pierrepont, N. Y. from which the marvelous black Tourmaline specimen in the Philadelphia Academy of Natural Sciences collection came.

Dreams of great green Fluorite specimens from Oxbow, N. Y., of yellow Chondrodite with violet crystals of Spinel on it, of Apatite from Rossie, of Spinel and Titanite from Natural Bridge.

"Dreams" you say. "Who cares about your dreams? You were going to tell us about that attic."

So let us get on the attic. We got on much sooner that we had expected. For Uncle Sam, for whom we labor, decided in May that work being slack it was just the time for us to take a vacation. We violently, albeit tactfully, disagreed. We

couldn't afford it then, we weren't prepared, the roads up North would be in bad shape, etc., etc. We offered all the arguments to no avail. Uncle Sam said "Take a vacation." We took one.

Diamond Hill, N. Y.

Took one and its first stop landed us in Utica, N. Y., at the end of a 300 mile drive. Let it be noted that in times past Utica had been home to us so that now we could hardly pass thru without visiting old friends. Old friends by which we mean Diamond Hill in Salisbury, N. Y., only 25 miles away. For here in the past we had dug up some fine large "Diamonds" under the stone wall that runs across the hill. This time we found no large ones. But digging produced a double handful of the medium sized sparklers. And digging also stirred up the black flies and the question was never settled who did the most efficient job the black flies or the Diamond diggers. For the flies just went to work and said nothing but Buzzzzzz. What we said was CENSORED.

Gouverneur, N. Y.

The next step and we arrived in Gouverneur, N. Y., which we considered as an ideal headquarters from which to search the surrounding country.

It was necessary of course to find a place to sleep and we found after a short search a small unpretentious "Rooms for Tourists" sign in front of a huge late Victorian house on the main street a short way east of the business section of the town.

The owner, let us call her Miss Yale, on learning of our purpose in visiting this section of the country, could not do enough for us, not only to make us comfortable but to further our attempts at collecting. Old maps were brought out for our examination, histories of the town having to do with the mining and quarrying industries were offered for our use. Miss Yale called friends who might have information on the subject and truly did all she could to help us locate the relatives of one O. K. Smith who Professor Valiant stated "Had ballasted the road bed into his house with fine green Fluorite specimens."

And always when we returned in the evening we were questioned about the day's finds and any information that Miss Yale had picked up thru the day was given to us. In the course of these conversations she often asked us to go up into the house attic and see the collection her brother had made when he was a boy. Several times Miss Yale asked this, always with a smile and always in a manner that told us quite plainly that she knew she was wasting our time. But we could see that she was very proud of what brother had collected. However time was limited and we thought to ourselves, "Kid stuff! A collection of pretty stones that attracted his childish fancy. Unlabeled probably and therefore useless." So we'd put off the attic trip, in a manner not to offend her, and from day break to dark we were constantly on the road striving with a very pleasurable success to make our winter dreams come true.

Day following pleasant day found the end of our vacation all to soon. So that with boxes of specimens and suitcases loaded into the car we were at last reluctantly ready to head homeward. Miss Yale came out to the car to bid us good bye and to assure us of her pleasure if we could return in the future. "I'm terribly sorry," said she, "that you never got a chance to see my brother's collection. It is such a nice collection, and I'm sure you'd have enjoyed it." Well who could go on from there? She'd been so helpful and so interested. After all a half hour spent in looking at a few pretty stones would in no way hinder us now, and if it would give her any pleasure surely we could spare it just because she'd been so kind. "Why, Miss Yale, we plumb forgot about that. And if you have the time now we'll be very glad to see it." She looked very pleased as she turned to lead the way.

The Attic Mine

It was the usual attic with boxes and trunks piled and tumbled about in a dark dusty confusion. Miss Yale explained that we were welcome to any of the specimens in case we considered them of any use as she led us to the light of one of the deep gabled windows and there, glowing in the early morning sunlight ——

GREAT SHADES OF JOPLIN, MISSOURI!!!!!! A huge specimen of Sphalerite and Galena that had no business on this earth outside of a museum, and one which to any collector's eye fairly shrieked it's locality. Then we remembered as breath gradually returned to us that Miss Yale had told us about her father having been interested in some lead mines out West, years back when she had been a little girl, and that he had been out there several times.

Now she was offering these specimens to us which he had brought back. We'd seen such things before in glass cases in museums. But never in our wildest dreams had we ever expected to own any. Yes, there were several. The largest measured about 18" X 12", was roughly oval and cabochon-shaped. The curved surface was covered, better to say was an entire mass of rough red Sphalerite crystals. Liberally sprinkled over this surface were crystals of Galena. These crystals were about ½" on a side and shaped like octahedrons with the top and bottom points cut off. We had never before seen Galena crystallized in this form. Other specimens were the usual Joplin red Sphalerite with many sparkling crystals of Calcite to form a contrast with the strawberry ore. A battered group of white Calcite crystals a foot or more in length stood nearby. Miss Yale explained that she would like to keep that group because for years it had been used as a door stop in her home. But the rest — well, we were welcome to them. We were hard pressed to properly express our thanks. Her brother's collection was just as we had anticipated. Unlabeled and of no particular value to a collector. We took one or two of the better pieces and again expressed our sincere thanks to Miss Yale, not only for giving us these fine specimens but for reminding us at the last minute that we had not seen the collection.

So we finally drove homewards thru the green New York countryside marveling at our good fortune. For never had we climbed so short a distance to acquire such notable specimens as we carried down from the Mine in the Attic!

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1 Valiant, W. S. "A Collector's Paradise". *Mineral Collector*, Parts 1-6, March-Aug., 1899.

2 Agar, W. M. "The Minerals of St. Lawrence, Jefferson, and Lewis Counties, New York", *American Mineralogist*, Oct. 1921 (pp. 148-153). Nov. 1921 (pp. 158-164).

Collectors' Tales

CUPID HAS NOTHING ON ME!

In 1918 I was employed by a large anthracite mining company at Lansford, Penn. Most of the single mining engineers of which I was one, were staying at the company's clubhouse near the main office. Mail would be delivered three or four times a day, at the clubhouse, and to facilitate handling a series of pigeon-holes were installed in the telephone room and each engineer, clerk and other individual staying there was assigned a box.

One late morning in going after my mail I noticed a post card lying in the wastepaper basket underneath the pigeonholes, and thinking it had dropped down, I picked it up, saw to whom it was addressed and placed it in the engineer's box. About 1:30 p.m., I found another card in the same basket, addressed to the same engineer, and it, too, was placed in the proper box. About 4:30 p.m., I happened to be out in the back of the clubhouse (something had fallen out of my window and I went to get it) when another card was seen and it also was addressed to the same engineer. It must have been lost by the mailman was my thought. This, too, was place in his box though it struck me as odd that the three cards sould be addressed to the same person, in about the same handwriting and bearing, apparently, the same picture.

(Continued on page 293)

Clubs Affiliated With the Rocks and Minerals Association

ARIZONA

Mineralogical Society of Arizona
Geo. G. McKhann, Sec.. 909 E. Willetta Street, Phoenix.
Meets at the Arizona Museum in Phoenix on the 1st and 3rd Thursday of each month.

CALIFORNIA

East Bay Mineral Society
Miss Nathalie Forsythe, Sec., 1719 Allston Way, Berkeley.
Meets on the 1st and 3rd Thursdays of each month (except July and August), at 8:00 p.m., in the Lincoln School Auditorium, 11th and Jackson Sts., Oakland.

Northern California Mineral Society, Inc.
L. M. Demrick, Sec., 424 Ellis St., San Francisco.
Meets on the 3rd Wednesday of the month at the Public Library in San Francisco.

Pacific Mineral Society
Mrs. Maude Oke, Sec., 9115 S. Harvard Blvd., Los Angeles.
Meets on the 2nd Friday of each month at 6:30 p.m., at the Hershey Arms Hotel, 2600 Wilshire Blvd., Los Angeles.

Southwest Mineralogists
Dorothy C. Craig, Corres. Sec., 4139 S. Van Ness Ave., Los Angeles.
Meets every Friday at 8:00 p.m., Harvard Playground, 6120 Denker Ave., Los Angeles.

COLORADO

Canon City Geology Club
F. C. Kessler, Sec., 1020 Macon Ave., Canon City.
Meets on the 1st and 2nd Saturdays of each month at 9:00 a.m. in the High School Building, Canon City.

Colorado Springs Mineralogical Society
Mrs. Helen S. Caldwell, Secretary, 221 N. 14th, Colorado Springs.
Meets usually at the Lennox House, Colorado College Campus, Colorado Springs, on the 2nd Monday, of each month at 7:30 p.m.

CONNECTICUT

Bridgeport Mineral Club
Mrs. Julia Walker, Sec., 55 Eaton Street, Bridgeport.
Meets in the Bridgeport Public Library on the 3rd Monday of the month.

Mineralogical Club of Hartford
Frank P. Rockwell, Secretary, 88 Fern St., Hartford
Meets the 2nd Wednesdays of each month. at 8:00 p.m., at 249 High St., Hartford.

New Haven Mineral Club
Mrs. Lillian M. Otersen, Sec., 16 Grove Place, West Haven.
Meets on the 2nd Monday of the month at the Y. W. C. A. on Howe St., New Haven.

IDAHO—OREGON

Snake River Gem Club
Mrs. A. Ingraham, Sec., Box 714, Ontario, Ore.
Meets alternately in Payette, Idaho, and Ontario, Oregon, (two small cities on the Snake River) on the 3rd Tuesday of every month.

ILLINOIS

Junior Mineral League
William Dacus, Sec., Morgan Park Junior College, 2153 W. 111th St., Chicago.

MAINE

Maine Mineralogical and Geological Society
Miss Jessie L. Beach, Sec., 6 Allen Avenue, Portland.
Meets last Friday of the month at 8 p.m., at the Northeastern Business College, 97 Danforth Street, Portland.

MARYLAND

Natural History Society of Maryland
2103 N. Bolton Street, Baltimore.
Office hours, Tuesdays and Fridays, 10:00 a.m. to 5:00 p.m.

MASSACHUSETTS

Boston Mineral Club
Mrs. Grace G. Dearborn, Sec., 40 Mt. Vernon St., Cambridge.
Meets on the 1st Tuesday of the month at 8:00 p.m., at the New England Museum of Natural History, 234 Berkeley St., Boston.

Connecticut Valley Mineral Club
Mary E. Flahive, Secretary, 96 South St., Florence
Meets on the 1st Tuesday of each month at 8 p. m. at various institutions in the Connecticut Valley.

MISSOURI

National Geologist Club
Mrs. D. P. Stockwell, Pres., Mt. Olympus, Kimmswick.

NEVADA

Reno Rocks and Minerals Study Club
Mrs. Rader L. Thompson, Sec., Box 349, R2, Reno.
Meets on the 1st Wednesday of each month, at 7:30 p.m., at the Mackay School of Mines, Reno.

Western Nevada Mineral Society
Miss Helen Griffing, Sec., 231 Mary St., Reno.
Meets on the 2nd Wednesday of each month at 7:30 p.m., at the State Bldg., Reno.

NEVADA

Mineralogical Society of Southern Nevada
Paul Mercer, Acting Secretary, Bureau of Mines, Boulder City.
Meets on the 2nd Monday of each month at Las Vegas High School and on the 4th Monday of each month at Boulder City High School—both meetings at 8:00 p.m.

NEW JERSEY

Newark Mineralogical Society
Louis Reamer, Secretary, 336 Elizabeth St., Orange.
Meets on the 1st Sunday of the month at 3 p.m. at Junior Hall, corner Orange and North 6th Streets. Newark.

New Jersey Mineralogical Society
O. B. J. Fraser, Sec.-Treas., 27 Stoneleigh Park, Westfield.
Meets on the 1st Tuesday of the month at 8 p.m. at the Plainfield Public Library.

NEW MEXICO

New Mexico Mineral Society
R. M. Burnet, Sec.-Treas., Carlsbad.

Society of Archaeology, History and Art
Carlsbad.

NEW YORK

Chislers, The
Miss Evelyn Waite, Sponsor, 242 Scarsdale Road, Crestwood, Tuckahoe.

Queens Mineral Society
Mrs. Edward J. Marcin, Sec., 46-30—190th Street, Flushing.
Meets on the 1st Thursday of the month at 8 p.m. at 8501 - 118th St., Richmond Hill.

OKLAHOMA

Oklahoma Society of Earth Sciences
W. P. Smiley, Sec.Treas., 229 W. Jefferson Street, Mangum.
Meets on the 2nd Tuesday of each month. at 7:30 p.m., at the Historical Museum, Mangum

PENNSYLVANIA

Thomas Rock and Mineral Club
Mrs. W. Hersey Thomas, Pres., 145 East Gorgas Lane, Mt. Airy, Philadelphia.
Meets on the 3rd Friday of each month, at 8:00 p.m., at the home of its president, Mrs. Thomas.

VERMONT

Mineralogical Society of Springfield
Victor T. Johnson, Sec., 11 Elm Terrace, Springfield.
Meets on the 3rd Wednesday of each month at 8:00 p.m. at the homes of members.

WASHINGTON

Gem Collectors Club
Mrs. Lloyd L. Roberson, Sec., 522 North 70th Street, Seattle.
Meets on the 1st and 3rd Tuesday of each month (except during the summer) at 8:00 p.m., at the Y. M. C. A.

Washington Agate and Mineral Society
Monroe Burnett, Sec., 802 S. Central St., Olympia.
Meets on the 1st Monday of the month, at 7:30 p.m. at the home of some member.

WISCONSIN

Wisconsin Geological Society
Frank H. Nelson, Sec., 740 N. Plankinton Ave., Milwaukee.
Meets on the 1st Monday of each month at 8:00 p.m., at the Public Museum in Milwaukee.

TWO BALANCED ROCKS IN NOVA SCOTIA

By MISS ELIZABETH KING

The article on "Balanced Rocks" by Allison Albee in the May, 1942, issue of ROCKS AND MINERALS was of special interest to me because there is a "rocking stone," a 500 ton granite boulder, a short distance outside Halifax, Nova Scotia, that I have often rocked by means of a pole as a lever. It is resting on a glaciated granite surface and is undoubtedly of glacial origin.

A few hundred feet away from this rocking stone is another large boulder resting on three smaller erratics that raise it off the granite ledge from half a foot to one and a half feet. This is described by J. W. Goldthwait in his "Physiography of Nova Scotia," Canadian Department of Mines, Geological Survey, Ottawa, Canada, Memoir No. 140 (1924), pp. 88-89.

Club and Society Notes

Wisconsin Geological Society

The Wisconsin Geological Society held its annual meeting in June, and the following officers were elected:

J. O. Montague, President
Herman Zander, Vice-President
Frank H. Nelson, Secretary-Treasurer

Dr. K. Greacen, J. Vukovich, G. O. Raasch, and J. Verhalen were elected to the Board of Directors.

Due to present conditions all lengthy field trips were abandoned, but the Society ended the year with a thorough exploration of the nearby quarries.

FRANK H. NELSON,
Secretary

The Chiselers

On the evening of June 19th, 1942, the members of The Chiselers met for a short business meeting at the home of our sponsor, Miss Waite, of Crestwood, N. Y.

We then walked a short distance to the home of Mr. and Mrs. Dewey who had invited us over to see their collection of minerals. Even though they had said that their collection was a small one we found that it consisted of a large number of most interesting specimens. Each member was later invited to choose some rock or mineral she would like to have from some boxes containing duplicate specimens of the Deweys' collection. Later refreshments were served and to end a most enjoyable meeting, Mr. Dewey showed us his coin and medal collection.

GEORGIANA REYNOLDS,
Secretary

New Jersey Mineralogical Society

At the last regular meeting of the New Jersey Mineralogical Society, the following officers were elected for the ensuing year:

Mr. J. D'Agostino, President
Dr. S. S. Cole, Vice-President
Mr. O. I. Lee, Vice-President
Mr. O. B. J. Fraser, Treasurer
Mr. G. R. Stilwell, Secretary
Miss H. Hageman, Asst. Secretary
Miss Edna M. Hensel, Librarian
Mr. James M. Dupont, Curator

A most interesting talk was also given by our new curator, Mr. Dupont, on local mineral localities.

G. R. STILWELL,
Secretary

With Our Dealers

The Iowa-Wisconsin lead and zinc mines were recently visited by A. J. Alessi, of Lombard, Ill., where many fine specimens were obtained for his stock. Much activity is in evidence throughout the district and new shafts are to be seen everywhere, he reports. Mrs. Alessi and Mr. and Mrs. Langdon Longwell, of Elmhurst, Ill., accompanied him.

Ward's Natural Science Est., Inc., of Rochester, N. Y., announce the receipt of three large boxes of showy copper minerals from Arizona. Azurites! Malachites! Chrysocollas! Ah! Ah! Ah! But why talk about them. Let us order some! (Note their new address in this issue).

C. L. Brock of the American Mineral Exchange, Houston, Texas, was going to take things easy during the summer but when a good shipment of gem-quality shattuckite arrived he forgot all about his vacation. You will find his ad in this issue of ROCKS AND MINERALS. Look it up!

In the July issue a bad error appeared in John Grenzig's advertisement on page 264 in which the purple G. E. lamp was listed at $1.25—the price should have been $1.50. We are sorry that this error appeared; our apologies are extended to Mr. Grenzig. The advertisement is repeated in this issue and the error corrected.

The Ultra-Violet Products, Inc., of Los Angeles, Calif., have recently issued a new catalog featuring a complete line of their many Mineralights. The company has made many improvements in the Mineralight so that it is now unquestionably far superior to any other ultra-violet lamp on the market. A package of 20 fluorescent specimens are supplied without charge with each lamp purchased. These serve as a valuable guide in the identification of fluorescent minerals. The most interesting feature of this 12 page catalog are photos of 11 minerals in ultra-violet colors—blues, reds, greens, yellows—are some colors shown. This catalog should serve as a ready guide for fluorescent analysis to all people interested in this subject. Every collector should have a copy of this interesting catalog—it is free. Look up their ad for the address.

BIBLIOGRAPHICAL NOTES

CALIFORNIA JOURNAL OF MINES AND GEOLOGY

The State Division of Mines, Department of Natural Resources, under the direction of Walter W. Bradley, State Mineralogist, Ferry Building, San Francisco, announces the release of the October 1941, issue of the *California Journal of Mines and Geology*, being Chapter 4 of State Mineralogist's Report XXXVII—160 pages, illustrated by photos, cuts and maps. (Price 60c—California residents please add 2c sales tax).

This chapter is devoted primarily to a report on the Mines and Mineral Resources of Humboldt County, by Charles V. Averill. It includes a rather detailed discussion of the petroleum possibilities of that area.

This is followed by the Geologic Branch Current Notes and a Report on "Tin in California" by Richard J. Segerstrom. Another Article on "California Quicksilver Program of the Federal Geological Survey" by Edwin B. Eckel follows. Under Special Articles there is a Report on "Recent Developments in the Tungsten Resources of California" by W. B. Tucker and R. J. Sampson with some notes by H. G. Hubbard and . C. O'Brien which supplement the statewide report on "Tungsten Resources of California" issued in the April, 1941, Quarterly; "New Manganese and Chrome Ore Specifications and Prices" by Metals Reserve Company, Government Purchasing Agency; a note by George L. Gary in answer to the question, "Does Scheelite Always Fluoresce?"; and a Paper on Bentonite. The usual notes on Statistics, Museum, Laboratory, and Library are included; and this final issue of the Journal for the year 1941 contains the complete Index of Volume XXXVII.

NEW AUSTRALIAN BOOK ON THE DIVINING ROD

Radial Detection—A guide to the use of the Radial Detector, mis-called the Divining Rod: By A. A. Cook.

Here is a new book on the use of the divining rod which the author calls radial detector. "Believe it or not," says Mr. Cook, "the detector works—whether in the finding of minerals, or oil, or water, or people; and it gives surprising results when applied to animal breeding and the testing of blood relationships."

Whether or not one believes in the divining rod, "Radial Detection" is a most interesting book and we recommend it to our readers. It is nicely written and features some tests which intrigue the reader so that he will want to try them. It is a small volume, 7½ x 5 inches in size, and contains 98 pages with 14 figures. It is published by Angus and Robertson, Ltd., 89-95 Castlereagh St., Sydney, N. S. W., Australia. Price 3 shillings, 6 pence (about 90c).

COLLECTORS' KINKS

A HINT ON STORING MINERALS

Many minerals, such as pyrite, marcasite, etc., if stored away should never be wrapped in white paper or placed in white boxes. Wrap them in brown paper or place in brown boxes. Brown paper is the purest and so does not ordinarily affect minerals. White paper on the other hand is not pure but has been treated with chemicals and these chemicals may affect some minerals and cause them to deteriorate.

Newspapers, likewise, are not pure and so should not be used to wrap minerals such as pyrite and marcasite if they are to be stored away.

Collectors' Tales

(Continued from page 289)

That night, after dinner was over and most everyone had gathered in the main recreation room, I happened to get a seat next to the engineer whose cards I had found when suddenly I heard him say to a friend:

"Just think, I got four post cards from Helen today. I threw the first three away but I'll keep the last one." Then after a brief pause, "Perhaps I better write her."

He did. They have long since been happily married and unless they chance to read this item neither will know how he happened to get four cards in one day when only one was sent. Incidently, unknown to each other, both of us had that day off which accounts for the many visits to our mail boxes. P. ZODAC.

CLASSIFIED ADVERTISEMENTS

WORLD'S BEST WANT AD. MEDIUM FOR MINERALS

Rate 5c per word; minimum 10 words. Remittance must accompany copy in all cases. Advertisers must furnish satisfactory references before their advertisements will be inserted. Forms close the 1st of every month.

BOOKS

Handbook For the Amateur Lapidary by J. H. Howard, 16 chapters covering all phases of gem cutting and polishing, 141 pp., 14 illus., price $2.00. J. H. Howard, 504 Crescent Ave., Dept. R., Greenville, S. C.

History and Geology of the Royal Gorge, an illustrated souvenir booklet with maps and drawings locating 54 minerals for touring collectors. 50c postpaid. F. C. Kessler, Canon City, Colo.

Art of Gem Cutting—Just out. Latest and most complete book for the lapidary. $2.00. Price list of American Gem Rough free. Sample sack 10c. Gem Exchange, Lake Bluff, Ill.

Fluorescence of Minerals by Chester Slawson. Excellent color plate of the Cranbrook display, plus text. 35c postpaid. Cranbrook Institute of Science, Bloomfield Hills, Michigan.

FOSSILS

Fossils, Minerals, Old Arms, Indian Beaded Trappings. prehistoric specimens, general line of curios. Lists 10 cents. N. E. Carter, Elkhorn, Wisc.

EXCHANGES

Autunite, Boltonite, Cryophyllite, Danalite, Enstatite, Ferrisicklerite, Graftonite, Heterosite, Triphylite and other Eastern species. Gunnar Bjareby, 147 Worthington St., Boston, Mass.

MINERALS

Special Offer: We will send 30 ores, including the more important ones, of 15 strategic war metals for $2.50 postpaid. List of gem materials, mineral crystals, fluorescent minerals free. Colorado Mineral Exchange, Salida, Colo.

Cabinet Specimens of New England pegmatite minerals — Triphylite, heterosite, graftonte, uraninite, gummite, autunite, tourmaline, cassiterite, caesium beryl, eosphorite, manganocolumbite, beryl, staurolite xls in matrix, fairfieldite, cordierite, chlorophyllite. Many others. Harold J. Verrow, Box 51, Gorham, N. H.

Beautiful Opals-Direct from Australia. Lapidaries Parcel 10 ounces cutting opal (about 50 stones) $10.00. Collectors specimens—good attractive parcels, $5.00, $10.00. Dozen small black opals $5.00. 10 ounces small opal chips $5.00. Illustrated catalogue No. 47 free. Natural History Books (thousands), lists free. Norman Seward, "Opal House," Melbourne, Australia.

Black Onyx—For the first time you may purchase slabs of black onyx made from Brazilian agate. Rough shaped. ready for polishing and finishing. Sizes 10x8 m/m to 20x15 m/m 50c each. Any quantity. American Jewels Corporation, Attleboro, Mass.

MINERALS

Minerals, Fossils, Indian Relics, Books, Coins, Curios Stamps, Old Glass. Catalogue 5c. Indian Museum, Osborne, Kansas.

Large Dark Purple Amethyst Crystals containing gold. 75c to $1.50 postpaid. Monroe Mineral Store, Monroe, N. Y.

Scott Rose Quartz Co.—Rose Quartz Black Hills specimens, all kinds and colors; for rock gardens, cabinets, etc. Boxes: 24 specimens, $1.00; 18 specimens, 50c; 15 specimens, 35c. Postage paid. Box 516, Custer S. Dak. Send stamp for price list.

Top Quality Breccia Jasper—Strong, clean, excelling all other Jaspers for beauty. Suitable sizes for all purposes. 40c per lb. Slabs 8c per inch. Wholesale to dealers. Leo Ferris, San Miguel, Calif.

Uraninite and select North Carolina specimens. Paul Silver, Genl. Supt., Feldspar Producing Co., Spruce Pine, N. C.

Millerite, Jelinite, Oolitic Limonite, Grunerite—Benedict P. Bagrowski, 1014 Vermont, Lawrence, Kansas.

New England Minerals for sale or exchange. Correspondence solicited. Rudolf C. B. Bartsch, 36 Harrison St., Brookline Mass.

25 Beautiful Ozark Specimens—About 5 lbs. Minerals, crystals, chalcedony, jasper, onyx and cutting materials, $2.00 postpaid. John Jennings, Eureka Springs, Ark.

Cutting Agates, Woods, Minerals—Bishop's Agate Shop, North Bonneville, Wash.

Chinese Carvings and Cabochons in Jade and other stones. Prices reasonable. Send for price list. Chas. O. Fernquist, N. 4108 Walnut Spokane, Washington.

Cabinet Specimens of New England pegmatite minerals. Many varieties. Harold J. Verrow, Box 51, Gorham, N. H.

FLUORESCENT MINERALS

Choice Fluorescent and Phosphorescent Polished Slabs of unsurpassed beauty with cold quartz lights, 2x3 to 4x6, $1.00 to $6.50 depending on material. All highest quality. Cabinet specimens. Edwin Skidmore, R.F.D. 1, Box 247, Westfield, N. J.

Fluorescent Calcite mixed with sphalerite and galena. I have been mining specimens for ten years and this is the only calcite I have found which will fluoresce under the black bulb or quartz light and only a small quantity available. For sale or trade for good willemite or wernerite. J. A. Robertson, Box 105, Baxter Springs, Kansas.

Fluorescent Mexican Fluorspar—Prices on request. A. J. Wallace, 118 Lawnside Avenue Collingswood N. J.

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